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THE PLANT DISEASE REPORTER

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinons, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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REPORTS ON POTATO LATE BLIGHT

MAINE: The week beginning August 28 was spent in company with Dr.Donald Folsom examining the potato crop for diseases. Sixty-three fields, mostly in Aroostook County, were examined critically. Although Late Blight (Phytophthora infestans) had been found to some extent throughout the State at earlier dates, the hot weather of 2 weeks ago apparently eliminated the earlier infections. On the present inspection no Late Blight was found in the State except in the St. John River Valley. In the area surveyed along the St. John from Van Buren to Fort Kent Late Blight was found in almost every field. Usually only a small amount was present but in parts of 2 fields the tops had been completely killed by the fungus. The Blight area of the St. John was found to extend south from Fort Kent into Ouellette and Guerette.

Although it appears now as though potatoes in Aroostook County would be harvested comparatively free from Blight it must be remembered that last year there was very little Blight prior to August 25. With the reservoir of Blight inoculum north and northwest of Caribou, Presque Isle, and Limestone, and the wind from that direction, Blight could still become serious if the weather should become favorable. -- Robert C. Cassell, Emergency Plant Disease Prevention Project.

MASSACHUSETTS: Late Blight made considerable headway in unprotected or poorly protected fields in the Connecticut Valley area of Franklin and Hampshire Counties during the last week of July and the first week of August. However, it became totally inactive during the hot weather period that followed. By the first of September, a few instances of scattered light infections were present on recently formed unprotected new side shoots in the vicinity of Amherst. -- O. C. Boyd, Massachusetts State College.

WEST VIRGINIA: Late Blight had caused damage to a small field of different potato varieties in the Canaan Valley of Tucker County. Sebago was less affected but the fungus was fruiting abundantly on the leaves of this variety. -- R. E. Atkinson, Emergency Plant Disease Prevention Project. August 28 - Sept. 2

MICHIGAN: Late Blight was found first during the week of August 7 in one field in Emmett County in northern Michigan. Only a few scattered plants were affected with only very light infections. -- J. H. Muncie, Michigan Agricultural Experiment Station. Quoted by I. E. Melhus.

IOWA: Late Blight has appeared in epiphytotic form in many of the late planted fields of potatoes in Iowa.

The mean temperature in Iowa for the last week of August was 63° F, 5° below normal. At the same time the mean rainfall for the State was 1.69 inches or 1.10 inches above normal. The late blight pathogen could not ask for a better break than that. Rainfall was so heavy that farmers could not get into the fields to spray with the result that the pathogen spread without hindrance. With the change of weather the farmers with late plantings are spraying around the clock to head off as much of the epiphytotic as possible. Fortunately most of the fields are fairly far along.

It is evident that the inoculum has been present in the fields even though unreported in some cases. All it needed was optimum conditions of temperature and rainfall.

Conditions in most of the Upper Mississippi Valley states during the last of August were optimum for the late blight organism. Since reports of late blight have come from a number of places it would be expected that with ideal climatic conditions outbreaks would occur. -- I. E. Melhus, Iowa State College. From letter to members of Late Blight Committee, Upper Mississippi Valley Plant Pathologists.

COLORADO: No Late Blight was found in fields surveyed in Weld County September 1. -- E. W. Bodine, Emergency Plant Disease Prevention Project.

POTATO DISEASES AND INJURIES IN MAINE

Robert C. Cassell

According to Mr. W. E. Schrumpf of the Agricultural Economics Department of the University of Maine, the 1944 State potato planting is 212,000 acres, the same in round numbers as the recorded planted acreage of 1943. Aroostook County has on the average 85% of the potato acreage of Maine. The acreage entered for certification in Maine, however, is 68,330, or 15,316 acres more than in 1943.

The general 1944 drought of New England extends north to the St. John River and is already having telling effects upon potato yields in Maine. Generally speaking, in the area as far north as Bangor, the tops of the potato plants are mostly dead. Between Bangor and Houlton the upright tops are mostly dead with some green stems prostrate between the ridges. North of Houlton the tops of late varieties are still green. The tops of early varieties, especially Cobblers, are mostly dead even in the St. John River Valley. Limited digging of Cobblers is in progress throughout the State. Reports are to the effect that around Corinna in central Maine some fields will not be worth digging because of the drought. In La Grange the Cobblers are yielding about 60 barrels (170 bu.) per acre. In Lee the yields are about 85 barrels (242 bu.) per acre, in Littleton about 90 barrels (256 bu.), and between Washburn and Presque Isle about 95 barrels (270 bu.), per acre. These yields represent reductions of 25 to 50% of the 1943 yields. The yields of Cobblers in the St. John River Valley more nearly approach normal yields than in any other area of Maine. This area, too, has had a more nearly normal rainfall this year than any other area in the State. Speculations on the yield of the main crop in Aroostook County are not too optimistic at present. However, the critical stage for determining yield has not any more than passed. A good rain in the County within the next week will practically make the crop. In spite of the drought there is moisture in most soils and a late frost without abundant rainfall will also have a favorable effect upon the yield.

The week of August 28 was spent in company with Dr. Donald Folsom examining the potato crop for diseases. Sixty-three fields, mostly in Aroostook County, were critically examined.

For Late blight (Phytophthora infestans) see with other Blight reports above.

Blackleg (Erwinia atroseptica) [E. phytophthora]. Of all the diseases present this year Blackleg seems to be the most wide-spread at the present time. It was found in 28.6% of the fields examined. The majority of the fields ranged from less than 1% to 3%. Only 2 fields had as much as 8% to 10%.

Bacterial Ringrot (Corynebacterium sepedonicum) was found in 12.8% of the fields. Most fields had less than 1% affected hills and the greatest amount found was 4%. Counts were made from what could be determined as affected tops verified by their accompanying infected tubers.

Botrytis Blight (B. cinerea) was found in 6 fields in Limestone and Van Buren. Except for 2 fields only a trace was present. In one field Botrytis was present on almost 50% of the plants with about 5% of the leaves destroyed, and in another field Botrytis was about 80% prevalent with a loss of 10% to 15% of the leaves.

Early Blight (Alternaria solani) can be found in practically every field. The northern part of Aroostook County seemed to be the most seriously affected. Many fields in Limestone and from Madawaska to Fort Kent were 100% affected with severity moderate to heavy. Some leaf loss accompanied the heavier infections.

Pink Rot (Phytophthora erythroseptica) was found in 2 fields. In one field in Littleton it was present in a small poorly drained area. The other field in New Sweden, however, was high and well drained and it appeared possible that there might be a 2% to 3% loss.

A trace of Stem Rot (Sclerotinia sclerotiorum) was found on Aroostook Farm in Presque Isle.

Scab (Actinomyces scabies). Although no accurate counts could be made at this time it seemed from what tubers were examined that the "russet type" scab may be quite prevalent. Very little of the deep "crater type" was encountered.

Rhizoctonia (R. solani) was seen in a few fields. No serious cases were seen and no counts were attempted at this time.

Verticillium Wilt (V. albo-atrum). Although no Verticillium was positively identified on this survey it is reported by Mr. E. L. Newdick, Chief of the Bureau of Plant Industry of the State Department of Agriculture, that Verticillium Wilt is probably more widespread this year than in an average year.

Mosaic (Virus), was found in 3 fields. One field in Lille had about 50% prevalence. Leaf Roll (Virus) was also occasionally encountered but no counts were attempted at this late date.

Tip-burning seems to be particularly serious throughout Maine this year. From the appearance of sprayed and unsprayed experimental plots at Aroostook Farm it appeared from circumstantial evidence that the worst Tip-burning could not be attributed to leaf hoppers or spray materials. Apparently the unusual hot dry weather of the current season has been the primary factor in the serious Tip-burning.

Aphid populations have been unusually heavy in the Aroostook potato fields this year. Aphid injury has been rather serious because very few growers customarily use nicotine or other materials to control aphids. There has also been some injury from flea beetles, leaf hoppers and tarnished plant bugs.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

OTHER REPORTS ON POTATO DISEASES

Reports are of Emergency Plant Disease Prevention Project surveys.

WEST VIRGINIA: In connection with the Golden Nematode survey, fields of potatoes in Randolph, Preston, and Tucker Counties were visited with Dr. W. A. McCubbin of the Bureau of Entomology and Plant Quarantine, and Franklin Bishop, Assistant Extension Plant Pathologist, West Virginia University.

In one field in Preston County prematurely dead vines were covered with, and the pith cavity filled with, sclerotia of the Charcoal Rot fungus Sclerotium batatticola. In another field considerable Stolon Rot caused by Colletotrichum atramentarium was found.

In Randolph County potatoes were being harvested. Early Blight was common in all fields visited. -- R. E. Atkinson, August 28-September 2.

WYOMING: During the weeks ending August 26 and September 2, a survey was made in Wyoming in the following counties: Platte, Johnson, Converse, Sheridan, Big Horn, Park, Washakie, Hot Springs, and Fremont. The writer was accompanied by Dr. G. H. Starr, Plant Pathologist of the University of Wyoming.

In Johnson, Park, Sheridan, and Hot Springs Counties the following diseases were commonly found: Ringrot (Corynebacterium sepedonicum), Fusarium Wilts (F. oxysporum and F. solani f. eumartii), Early Blight, Blackleg, Rhizoctonia, Scab, Spindle Tuber (Virus), Mosaic (Virus), and Hay Wire (Virus). Psyllid Yellows (induced by Paratrioza cockerelli) was general in Park, Johnson, Sheridan, and Hot Springs Counties, and in fields and garden plantings where control measures were not applied the crop will be a complete failure.

The same diseases were found in Fremont County. In addition Witches' Broom (Virus) was found in some fields. Ringrot was more widespread in Fremont County and infection ranged from 2 to 5% in some fields to as high as 50% in others. -- E. W. Bodine.

COLORADO: During the week ending August 18 surveys were made in Weld and Larimer Counties. Harvest in the early potato district in the vicinity of Gilcrest, Weld County, was in full swing. Early Blight ranged from 50 to 100% in prevalence in all fields but was causing only a trace amount of damage. Ringrot was found in only a few of the fields in trace amounts. In one field, however, near Milliken, 15% of the plants were infected. Scab was found ranging from a trace to 1% in most of the fields examined. In 2 fields, however, the incidence appeared to be very high. Twenty-five truck loads of potatoes were examined while being unloaded at Gilcrest. Scab was found in amounts ranging from trace to 1%. In general the prevalence of Scab appears to be less than in previous years.

Fusarium Wilts were found in all fields in amounts ranging from a trace to 1%.

In Late potato fields in the eastern part of Larimer County high amounts of Mosaic and Ringrot and Fusarium Wilts were found. Calico (Virus) and Early Blight were found in small amounts.

On September 1 a disease survey in Weld County was made in company with Dr. H. A. Edson. Several potato fields in the Windsor, Eaton, and Greeley

areas were found showing a high percentage of the plants infected with Fusarium wilts; namely, F. oxysporum, F. solani, and F. solani f. eumartii. Ringrot was found to be quite prevalent in some of the fields. -- E. W. Bodine.

TOMATO DISEASES IN SOUTHEASTERN IOWA

Edgar F. Vestal

In response to a request by Mr. Verne Filbert, Field Manager of the Marshall Canning Company of Marshalltown, a survey of some 600 acres of tomatoes in the Marshalltown-Pella-Oskaloosa area was made during the period August 22 to 26. The survey also covered crops in Wapello, Davis, Van Buren, Henry, Washington, and Muscatine Counties.

A careful survey of some 300 acres in the Pella-Oskaloosa area revealed that Bacterial Spot (Phytomonas [Xanthomonas] vesicatoria) occurred in every field, from a trace to as much as 50% of the fruit surface being covered. In many instances all of the fruit on a vine will be worthless for canning. Losses in most of the fields will run from 5 to 25%. In the Marshalltown area losses will be less, from 5 to 10%. No bacterial spot was seen in the Muscatine-Conesville area, although it had been reported that some of the farmers thought their tomatoes were affected.

The canning company secured its plants from Cairo, Georgia; Hope, Arkansas; and Marshfield, Missouri. Most of the plants were of the Rutgers variety and were certified at the shipping point. Representatives of the canning company stated that they were familiar with the bacterial spot disease from previous seasons' experience but that they did not see it last year. This statement, together with the fact that the bacteria are seed-borne, indicates that the infection this year may have originated with the seed. Attempts are being made to learn whether this was the case.

Nail Head Spot (Alternaria tomato) was found as a minor disease. It evidently has been common in the past as the farmers have been calling the bacterial spot seen this year "Nail Head". Microscopic examination of fruits and leaves have revealed only a small number of the spots to be caused by A. tomato.

Bacterial Canker (Phytomonas michiganensis) [Corynebacterium michiganense] was present as a trace in the Marshalltown-Pella-Oskaloosa area.

Septoria Leaf Spot (S. lycopersici) occurred in traces in the Marshalltown-Pella-Oskaloosa area, but in the Muscatine-Conesville area it had caused considerable defoliation.

Growth Cracks, Sun Scald, and Soil Rots have caused and will cause the most serious losses in the Pella-Oskaloosa area. Beating rains and heavy winds have broken many of the plants and the tomatoes lie on the ground exposed to the sun. At the time of the survey at least 25% of the fruit was in various stages of decay. The rain and cold over the weekend of August 25 to 27 certainly will add to the losses already suffered. In the Marshalltown area the tomato plants had not received such a severe beating and were mostly standing with the tomatoes scattered and protected from the sun by the foliage.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

BEAN DISEASES IN NEW YORK

John S. Nicderhauser

On August 14 and 15 a survey was made of snap-bean diseases in Central New York with Dr. W. H. Burkholder, Department of Plant Pathology, New York State College of Agriculture, Ithaca; and Drs. O. A. Reinking and W. T. Schroeder, New York State Agricultural Experiment Station, Geneva. The area surveyed is the principal snap-bean region of New York State, and consists of contiguous portions of Madison, Oneida, Chenango, and Cortland Counties. Thirty-eight fields, totalling 609 acres, were actually surveyed, and these fields may be considered representative of about 7,000 acres of snap-beans in this area. The principal varieties seen were Bountiful, Tendergreen, Black Valentine, and Idaho Refugee. Generally speaking, the beans grown in the Madison-Oneida-Chenango area were marketed directly as fresh snap-beans, while the beans seen in Cortland County (mostly Idaho Refugee) were grown for the canning factories. There had been practically no rainfall in this region since the 22nd of June, and the temperature had been unusually high for the last three weeks. The hot, dry season had adversely affected the quality of the bean pods by making them tougher and drier, so that they would not crack crisply when bent. In several instances crates of beans had been returned from the market for this reason. The weather also was instrumental in keeping well in check most of the diseases of beans. Insect problems were generally slight, though a few moderate infestations by aphis were seen. The Mexican bean beetle may be found throughout the area, but it does little damage even though no dusting is done for its control.

The so-called "common" bacterial blight (Xanthomonas phaseoli) was observed in 9 fields, but was usually present only in traces and showed no indication of progressing recently. In one field both bacterial blights (X. phaseoli and Pseudomonas medicaginis var. phaseolicola) were common and doing considerable foliar damage. About 10% of the pods were also infected. This field was in a small area which had been favored by several local showers during July. It was thought possible that the high disease count in this case could be traced to the nodule-inoculation process being conducted in a tank which had just previously treated a badly affected lot of seed.

Halo blight (Pseudomonas medicaginis var. phaseolicola) was observed in 16 fields, but was present only as a trace in 11 of them, and in only one case (see above paragraph) could it be said to be severe. The causal organism is very sensitive to high temperatures, and this fact has probably been a main reason for its relatively slight effect in the 1944 bean fields, even though present in many of them. In a field of Refugee beans (thought to be U. S. #5), halo blight was common with about half of the plants having a lesion or two. But here the most serious manifestation of the disease was a stem-girdling at the base of the plant, causing the entire plant to die. About 2% of the plants were thus affected.

Anthracnose (Colletotrichum lindemuthianum) was found only as a trace in 2 fields. This disease just never had a chance to develop during the hot, dry summer. As an illustration of this fact, one case may be cited where the grower had saved seed (variety Cranberry) from a 1943 field in which anthracnose was serious. In the field planted this year with this seed, no anthracnose could be found at all.

In 3 fields the dry-root rot (Fusarium solani var. martii f. 3) [F. solani f. phaseoli] was found, and in the most serious case was causing the death of approximately 5% of the plants. In each of the 3 cases, beans had been planted on that field either last year or the year before.

The common bean mosaic (Marmor phaseoli) was seen in 10 fields. The amount found exceeded 1% in only 2 cases, which were 10% (variety Bountiful) and 55% (variety unknown). No data were obtained as to the seed-source for these 2 fields.

Of the 6 Idaho Refugee bean fields surveyed in Cortland County, 4 of them contained appreciable percentages (2-20%) of "lop-sided mosaic". Zaumeyer (Phytopath. 28: 520-522. 1938; Jour. Agr. Res. 64: 119-127. 1942.) considers this abnormality to be an inherited leaf variegation. --
EMERGENCY PLANT DISEASE PREVENTION PROJECT

DISEASES OF BEANS IN COLORADO AND WYOMING

E. W. Bodine

During the week ending August 18 a survey was made in Weld and Larimer Counties, Colorado.

In Wyoming, in company with Dr. G. H. Starr of the University of Wyoming, a survey was made during the weeks ending August 26 and September 2 in Platte, Johnson, Converse, Sheridan, Big Horn, Park, Washakie, Hot Springs, and Fremont Counties.

Pinto beans in Colorado. Bean Rust (Uromyces phaseoli var. typica) was found to be widespread in pinto beans in Weld County. The heaviest infection was noted in the vicinities of Lucerne and Eaton. During the period from August 5 to August 14 inclusive, weather conditions were less favorable for spread and development of rust. Rust was 100% prevalent in many fields and the yields will be reduced.

Bean Mosaic (Virus) was found to be prevalent in all fields inspected. In some fields 10-20% of the plants were infected with mosaic; in others, 1 to 5% were infected.

Red Node Virus disease was found in trace amounts in only a few of the fields visited.

Bacterial Blight (Xanthomonas phaseoli) was observed in all fields in small amounts and will probably cause only a slight amount of damage.

Trace amounts of Dry Root Rot (Fusarium solani f. phaseoli) (F. martii var. phaseoli) were found in 2 fields.

In many fields the plants are ripening prematurely (physiologic). What is bringing about this condition is unknown.

Pinto beans in Wyoming. Mosaic was found in all fields inspected in Wyoming. Infection ranged from 5 to 40%.

Common Bacterial Blight was found ranging from a trace to 2% in many fields. In many of the fields small areas of plants were heavily infected and these were scattered over the fields.

Sclerotinia sclerotiorum (white mold) was noted in Park and Big Horn Counties. In some fields only a slight amount of infection was recorded while in others the incidence appeared to be very high, especially on the plants in the lower portions of the fields.

Red Node was found in trace amounts over the territory traveled.
Rust was found in Park, Big Horn, and Washakie. The heaviest amount of infection recorded was in Park County northeast of Powell, Wyoming. Here many fields were 100% infected and some reduction in yield will result.
Dry Root Rot was found in all pinto fields surveyed in Wyoming.

Great Northern variety in Wyoming. A trace to 1 per cent Mosaic was observed in some fields. White mold was also found in many fields in Park and Big Horn Counties. Several fields were heavily infected with Rust in Park County. Dry Root Rot was found in all counties with the exception of Fremont County.

Garden beans in Colorado. Garden beans in general appear to be in good condition. Bacterial Halo Blight (Pseudomonas medicaginis var. phaseolicola) was present only on the leaves in many of the fields examined. With prevailing weather conditions unfavorable for development and spread of the disease it is unlikely that many pods will show the characteristic lesions.

Garden varieties for seed production in Wyoming. Bacterial Halo Blight was general over the entire State of Wyoming. In the majority of the fields only a slight amount of infection was observed. Leaf, stem, and pod lesions were present. One 20-acre field planted with Full Measure variety in the vicinity of Powell was 100% infected. In the Shell Creek district in Big Horn County 400 acres planted with Burpee variety were 75 to 80% infected with Halo Blight. The stands were poor and plant growth was weak in the fields inspected. Burpee variety was also found to be heavily infected in a few fields in Washakie County. In general Halo Blight was more general in Washakie County than in the other areas surveyed. However, the infection ranged from a trace to 2%.
Dry Root Rot was found ranging from a trace to 2% in many of the fields inspected in Wyoming.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

REPORTS ON ONION DISEASES

Except where noted, reports are of Emergency Plant Disease Prevention Project surveys.

THIOSAN FOR ONION SMUT CONTROL IN NEW YORK: Approximately 250 growers in 7 counties availed themselves of the opportunity to try the new Thiosan dust seed treatment for the control of onion smut (Urocystis cepulae) this year, as against about 100 last year. Nearly 4500 pounds of seed were thus treated in April and May. A random survey of 54 farms this summer in Genesee, Orleans, Wayne, Oswego, Cayuga, Madison, and Oneida Counties revealed almost universal satisfaction. The average percentage of smut for dusted seed was 6.3, and for the liquid treatment 6. It was a difficult year in which to control smut on account of the excessive amount of rain during the emergence period. Formaldehyde seemed to give poor control on 4 of the 54 farms visited and the dust did likewise on 5 places. Reasons for dust failures were sometimes obvious and can be corrected in most cases. Growers list 8 distinct advantages of the new method against 2 or 3

disadvantages. The labor saved and more even stands are the most important items to balance against increased cash outlay. The indications are there will be a much larger tonnage treated next year if dust is available. -- A. G. Newhall, New York State College of Agriculture Weekly News Letter, August 28.

VIRUS DISEASES REPORTED ON ONION: At Aroostook Farm in Presque Isle, MAINE, (August 28-September 2), Dr. Reiner Bonde called attention to a number of wild and cultivated plants infected by the Aster Yellows Virus, including onion. Dr. Thomas Sproston Jr. reports the occurrence of Aster Yellows in an onion field in North Hadley in Hampshire County, MASSACHUSETTS. The suspected disease was first found by Dr. Sproston July 12 and has since been verified as Aster Yellows. This was a single plant occurrence and the first to be reported from Massachusetts. -- Robert C. Cassell.

In WISCONSIN, Aster Yellows was observed in set and seed onions in the Racine-Kenosha area and in Ozaukee County. Although still occurring in from a trace to slight amounts, it appears to have increased noticeably over last year and is beginning to give some concern especially where seed onions are grown. -- Edwin E. Honey, July 24- August 9.

During a just-finished tour of onion fields in Clay County, MINNESOTA, variable amounts of Yellow Dwarf (Virus) were observed on all varieties. Counts made on some of the fields showed between 7 and 9% affected plants. This disease seems to be increasing in this area. -- R. C. Rose, Extension Plant Pathologist. August 9.

DOWNY MILDEW IN MASSACHUSETTS: A second case of onion downy mildew (Peronospora destructor) was observed in Danvers, Essex County, on August 2. Every plant in a large patch of yellow Japanese seed onions was severely infected, while an adjacent planting of yellow Spanish onions seeded at the same time showed much less damage. -- O. C. Boyd, Massachusetts State College.

OTHER REPORTS ON DISEASES OF ONION: Pink Root (probably Fusarium sp.) was found on almost 100% of the roots of a harvested field in Mansfield, CONNECTICUT, the yield reduction probably amounting to 10 or 15%. Blast (Non-parasitic) was severe on all plants in a small planting in Mansfield.-- Robert C. Cassell, August 14-16.

A survey was made on muck soils in northcentral and northeastern INDIANA with Dr. C. T. Gregory, extension plant pathologist of the Purdue Agricultural Experiment Station, August 7-12. Many of the early onion fields were being harvested and, in general, were free from Smut except for occasional affected bulbs in one 25-acre field of Yellow Globe in Steuben County, in which formaldehyde was supposedly used at planting time. -- J. S. Tidd.

In WISCONSIN, a trace of Smut was observed in the Yellow Globe variety in Ozaukee County. -- Edwin E. Honey, July 24-August 9.

Purple Blotch (Alternaria porri) has made its appearance in onion fields examined in Clay County, MINNESOTA, and is causing considerable damage on Sweet Spanish and less damage on Yellow Globe. -- R. C. Rose, Extension Plant Pathologist. August 9.

In onion sets being harvested in Weld County in northern COLORADO (August 4), Smut caused 50% loss in one field. Pink Root (Phoma terrestris) was also present.

A slight amount of Basal Bulb Rot (Fusarium oxysporum f. cepae) (F. zonatum) was observed in representative fields in Weld and Larimer Counties (week ending August 18).

In a survey in Otero and Pueblo Counties in southern Colorado (August 8-12) in company with Dr. W. A. Kreutzer of the Colorado Agricultural Experiment Station, a trace of Purple Blotch was observed in representative fields. The amount of disease is not excessive for this time of year. However, owing to late plantings and consequent delay in maturity of the tops it is possible that damage due to Purple Blotch may exceed that experienced in former years. Other diseases observed in small amounts were Basal Bulb Rot and Pink Root. -- E. W. Bodine

Onions in the Walla Walla Valley of southern WASHINGTON yielded a satisfactory crop. Harvest was nearly complete at the time of my visit (July 24-31). Evidence of Root Rot, probably due to Fusarium sp., was noted on the culls in every field, but losses in late onions probably did not exceed 5%. Somewhat larger losses were reported to have occurred in the earlier crop. Onions for the seed crop appeared in excellent condition where observed. In certain plantings a small percentage of Bulb and Neck Rot were noted but these were obviously secondary to mechanical injury or wireworms. -- Lytton W. Boyle.

In Marion County in western OREGON, symptoms of Pink Root were evident on roots of plants in every onion field visited (September 2.). Sample plants indicate the disease to be rather variable in prevalence and severity within fields. The disease undoubtedly causes reduction in yield, but no basis for estimate is available. -- Lytton W. Boyle.

DISEASES OBSERVED ON WORMSEED IN MARYLAND

E. A. Walker

Wormseed, Chenopodium anthelminticum, is grown extensively in Carroll County in northern Maryland for its medicinal oil content. Approximately 500 acres are grown, confined mostly to the area around Taylorsville, Mt. Olive, Winfield, Day P. O., Mt. Airy, and Gaither. Plants are grown in large plant beds, transplanted to the field like tomato plants, fertilized and cultivated. The crop was planted late this season and the growth was very irregular, owing in part to the extensive drought of the past 3 months.

Diseases affecting the crop in this area have not been reported before. During this survey, on August 5, 31 farms were visited, representing about 125 acres of wormseed.

Location	Number fields	Acres	Percent of plants affected with diseases: Fusarium Wilt	Corcospora Leaf Spot	Variegation
Day P. O.	2	17	1.5	1.5	2.0
Etchison	1	4	0.0	0.0	0.5
Gaither	2	11	1.0	0.5	1.0
Morgan	2	13	2.0	0.5	1.5
Mt. Olive	6	23	0.8	0.5	0.5
Taylorsville	18	68	0.5	0.5	0.5
	31	125			

Leaf Spot caused by Cercospora anthelmintica Atk. could be found to a slight extent at this time in all the fields visited. In one plant bed near Day P. O. the disease was developing on nearly every plant.

Fusarium Wilt (F. pallido-roseum (Cke.) Sacc.) [= F. semitectum Berk. & Rav. var. majus Wr.] was affecting about 1% of the plants in nearly all fields examined.

A Leaf Spot, possibly bacterial, had practically defoliated a single plant in a field near Mt. Olive.

Genetic Variegation of whole plants and parts of plants could be detected in each field. Affected plants would amount to about 0.5%.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

DISEASES ON COTTON IN TEXAS

George E. Altstatt

The following is a report on cotton diseases observed in the northwestern and western parts of Texas:

Texas Panhandle: The principal cotton disease in the Pandhandle area of Texas is Angular Leaf Spot and Bacterial Boll Rot (Bacterium [Xanthomonas] malvacearum). Infection was variable in intensity, but was found in all fields examined the latter part of July. Both irrigated and nonirrigated cotton was infected.

El Paso Valley (irrigated): Angular Leaf Spot and Bacterial Boll Rot were observed in most fields. In one large field of SXP cotton, there was severe damage by Black Arm, which caused large, darkened canker-like areas on the main stems and lateral branches of the plants, The infected areas were usually located at points ranging from 6 to 18 inches above the soil line, and caused a brittleness of the stem. In windy periods, many stems broke over at the points of infection.

Cotton Root Rot (Phymatotrichum omnivorum) was observed in a few localized areas.

Verticillium Wilt (V. albo-atrum) was severe in some fields, particularly in the vicinity of Fabens and Tornillo. The estimated reduction in yield (as of August 29th) for El Paso county is 5%. A trace was noted in Hudspeth County.

Cercospora Leaf Spot (C. althaeina) was noted on both long and short staple cottons but was more common to long staple varieties. There were traces of this leaf spot on bracts and bolls.

Cotton Rust (Puccinia stakmani) was observed occasionally in very limited quantity.

Madera Valley (irrigated): Cotton in the Madera Valley of Reeves County showed slight damage due to cotton Root Rot; traces of Verticillium Wilt and Angular Leaf Spot and Bacterial Boll Rot.

Fort Stockton Area (irrigated): The relatively small acreage in cotton in this area showed traces of Angular Leaf Spot and Boll Rot, and Alternaria Leaf Spot (Alternaria sp.). No Root Rot nor Verticillium Wilt was observed (August 30).

EMERGENCY PLANT DISEASE PREVENTION PROJECT

ALFALFA AND CLOVER SEED SITUATION IN NORTHERN MINNESOTA

Ian W. Tervet

In northern Minnesota, particularly in western Koochiching, Lake of the Woods, Roseau, and Beltrami Counties, there is extensive production of legume seeds. Baudette, in Lake of the Woods County, is the centre for alfalfa and alsike seed. In Roseau County, sweetclover seed, in addition to alfalfa and alsike, is produced, while some red clover seed comes from northern Beltrami County. The production of alfalfa, alsike and sweetclover seed in Minnesota is concentrated in these northern counties, but red clover is produced also in some other Minnesota areas. This northern region has been important in seed production for the last 25 years, but yields of alfalfa and alsike clover seed have been decreasing steadily. While there are annual fluctuations in total seed production depending on the acreage devoted to seed, the principal reason for decreased production has been due to lower acre yields. It appears that the 1944 crop of alsike and alfalfa seed will be disappointingly low. Yields of alsike are estimated to be about 100 to 125 lbs. per acre, while alfalfa will not exceed 100 lbs. and probably will be much lower, about 60 to 70 lbs. per acre. Yields of red and sweetclover appear to be somewhat higher than for alsike but are still less than the accepted normal yields for that area.

The cause (or causes) for the decreased yield of these seeds has not been fully determined. Many interesting explanations are offered by farmers, seed dealers, and others interested in seed production but specific information is lacking. The wet seasons of the past few years are blamed by most people for the decreased yields. During July and August, 1944, one week of relatively dry weather occurred. The writer spent most of the week of August 28 to September 2 in this northern area, and it rained almost continuously during that 6-day period. At that time, threshing of alsike should be almost finished but the continuing rains have prevented the completion of the work. Thus seed discolorations and sprouted seeds are common in much of the alsike. Samples of alsike had from 5 to 10% of brown discolored seeds, and many of these brown seeds had sprouted. An analysis of alsike seed, as well as of those of other legumes, from this area will be made later to determine the association of fungi and bacteria with seed discoloration and viability. While the writer has been unable to visit this area earlier in the season and indeed was able to spend only a few days towards the end of August in the section, yet some observations as well as reports from persons long associated with seed production might be of interest in the evaluation of the seed production problem. During wet years, seed production and especially seed quality tend to be poor. It is to be expected that poorer quality seed will result when wet weather persists from flowering to harvest, but it is not clear what direct influence excessive precipitation has on yield. Indeed acre yields of seed were much higher in the past even in very wet years, so that precipitation alone is not entirely responsible. Many growers consider that pollination is reduced in wet weather since bees would be less active during such weather. In alfalfa fields where the seed set is very poor, some plants are found with excellent production. These plants are almost invariably isolated, growing at the edges of fields or where the stand is thin. Plants growing by the roadside generally had good seed set, while in adjacent fields little seed was

produced. It seems, therefore, since isolated plants had good set that conditions for pollination were not too unfavorable.

During the past 25 years an increased acreage has been devoted to legumes. Reports indicate that alfalfa seed is now being produced on heavier and more poorly drained soil types than were formerly used. On these richer soils, there is increased hay production and it appears probable that heavy vegetative growth contributes to poor seed production. Similarly farmers reported that in 1944 alsike was more rank than in any recent years.

Certain insects have been reported as a major hazard in alfalfa seed production in northern Minnesota, and the recommended control measure of burning the stubble is practised by some farmers. There is little field evidence to indicate that burning greatly increases the yield of the next seed crop. It is possible that the burning of the stubble has not been properly accomplished. Many alsike seed samples were infested by an insect, known to the northern farmers as a red mite. Infested seed samples have been sent to Dr. A. A. Granovsky, Department of Entomology, University of Minnesota for examination.

Diseases, while common on alfalfa and red clover, do not seem to be primarily responsible for all of the poor seed production, although in a few instances diseases were causing heavy loss to the plants.

On alfalfa (mostly the Grimm variety) the leaf spot caused by Pseudopeziza medicaginis was most common and destructive, considerable defoliation resulting from this disease. Stagonospora leaf spot (Leptosphaeria pratensis) also occurred on the leaves, but was of minor importance. Blackstem, presumably Ascochyta imperfecta, was common but caused serious injury in only one field. In this case, the stems had dried up and many seed pods had fallen from the plants. A stem blight, apparently resulting from crown and root rot, was destructive in one field. The stand was old, at least 5 years, and until now could be considered good. A very excellent hay crop had been obtained from the first cutting and the second growth was now in full flower. Some plants had produced no second growth, while others had reached flowering before the shoots began to wilt. In all, the stand had been decreased by 30%. The cause of the death of the shoots was not determined by examination of the plants in the field, but isolations from diseased plants are being made and will be reported on later.

Alsike clover was relatively free from disease. Cercospora leaf spot (Cercospora zebrina) and sooty blotch (Dothidella [Cymadothea] trifolii) were most frequently found but the damage resulting from these diseases was minor. Little loss from disease was found on sweetclover, Stagonospora leaf spot (Leptosphaeria pratensis) and blackstem being common but not severe. Alternaria sp. was commonly associated with the blackstem on sweetclover, although this organism may be secondary. Pycnidia of Ascochyta lethalis were not found on any lesions.

Red clover was more heavily attacked by diseases than other clovers or alfalfa and yet produced more nearly a normal seed crop than the other legumes. The principal disease is northern anthracnose (Kabatiella caulivora) but loss from this disease in the northern counties was not so great as in east-central Minnesota. Sooty blotch (Dothidella [Cymadothea] trifolii) was very common and was causing some defoliation. Powdery mildew (Erysiphe polygoni), bacterial leaf spot (Phytomonas trifoliorum)[Pseudomonas syringae] Macrosporium leaf spot, and Cercospora leaf spot also were found. Of these 4 diseases, powdery mildew caused most damage.

EMERGENCY PLANT DISEASE PREVENTION PROJECT.

PEANUT DISEASES IN SOUTHEASTERN ALABAMA

G. M. Stone

The week of August 21 was spent in Southeastern Alabama on a survey of peanut diseases. Peanuts of the Runner type predominate in the area; only a few fields of Spanish were seen. The crop as a whole is later than usual and yields are not expected to equal those of last year. An estimate of the percentage stand and the degree of maturity were recorded for each field. The findings of the survey are given in table form below.

Condition of and diseases observed on peanuts in southeastern Alabama.

Location	Type	Number of Acres	Approx. % Stand	Maturity	Disease Index* Leaf Spot	Southern Blight	Peg Rots
Union Springs-Troy	Spanish	40	80	Early	4[a]	2	2
	Runner	15	70	Late	2	2	1
	"	12	80	Late	2	1	1
	"	8	60	Late	1	1	2
	"	10	90	Med.early	1	1	1
	"	15	95	" "	2	1	2
Troy-Ozark	"	12	50	Late	2	3	2
	"	8	65	Late	3	2	1
	"	14	80	Med.early	3	1	1
	"	20	70	" "	3	2	2
	"	15	80	Early	2	3	2
	"	20	50	Late	3	1	1
	"	15	70	Med.early	3	4	2
	"	20	80	" "	2	1	1
	"	10	80	" "	2	1	2
	Spanish	10	70	Early	4[b]	1	2
	Runner	20	85	Early	3	2	1
Dothan	"	40	90	Med.early	3	1	1
	"	12	85	" "	3	2	1
	"	15	95	Late	1	1	1
	"	30	40	Late	2	3	2
	"	25	85	Med.early	4[a]	2	2
	"	10	90	" "	3	1	1
	Spanish	10	65	Early	4[b]	1	3
	Runner	20	85	Early	4[a]	3	1
	Spanish	20	70	Late	3	2	1
	"	8	80	Early	4[c]	3	1
	Runner	22	85	Med.early	3	3	1
	"	100	70	Med.early	3	3	3
	"	50	75	Med.early	3	3	2
	"	50	80	Med.early	3	3	2

* Key to Disease Index Figures:
0 = No disease
1 = Trace
2 = Moderate
3 = Moderate-Severe
4 = Severe

Amount of Leaf Shedding:
a = Light Shedding
b = Medium Shedding
c = Severe Shedding

Cercospora Leaf Spot (Cercospora spp.) was found to be considerably more severe on Spanish than on Runner peanuts. However, the disease is apt to become more severe on late plantings of Runners as the season progresses. Because of the predominance of the Runner type in the section, losses from Leaf Spot will no doubt be light.

Medium to medium-severe attack of Southern Blight (Sclerotium rolfsii) was found in the majority of fields examined. The disease is no doubt partly responsible for poor stands in many fields.

The principal cause of Peg Rots in the fields examined was Sclerotium rolfsii. It is not known to what extent other organisms and such factors as excess moisture, etc., might have played, but at the time of the survey, S. rolfsii was very much in predominance.

Sclerotium rolfsii is considered by the writer to be a major cause of disease of peanuts in Southeastern Alabama and considerably more important on Runner peanuts than Cercospora Leaf Spot.

Attention is called to the fact that only 9 fields out of a total of 30 had stands better than 80%. Practically all of the seed planted in the section were treated, but machine-shelled.

EMERGENCY PLANT DISEASE PREVENTION PROJECT.

SOYBEAN DISEASES IN MARYLAND, DELAWARE, AND NEW JERSEY

E. A. Walker

Diseases were practically absent in soybean fields examined during the week of June 12 to 17 in Anne Arundel and Baltimore Counties in eastern Maryland, except for a moderate amount of Bacterial Blight (Pseudomonas glycinea) at Gambrills and Reisterstown.

During the period June 19 to 24, farms were visited in the middle and lower Eastern Shore counties of Maryland. Crops in this area are suffering from a continued drought, and soybean diseases for the most part are not destructive. About 5% killing of plants due to Drought was noted, and considerable retardation of seed germination and slow growth of the young plants. Of 30 fields visited 14 appeared to be free from disease. Bacterial Blight occurred in very light infections, mostly on the lower leaves, in 6 fields, and severe leaf spotting half way up the plants was observed in a volunteer field near Pocomoke and another near Snow Hill in Worcester County. Cercospora Spot or Frogeye (C. daizu) [C. sojina] was also present in these 2 volunteer fields. Downy Mildew (Peronospora manshurica) was beginning to appear in a field near Pocomoke and one near Snow Hill. Phyllosticta Leaf Spot and Septoria Brown Spot (Phyllosticta sp., Septoria glycines) were seen in 3 fields near Snow Hill.

During the period July 14 to 22, soybean fields were examined in Delaware and the upper Eastern Shore counties of Maryland. The 18 fields visited in Delaware include 4 at Marydel, 2 at Hazletville, 1 at Camden, and 2 at Magnolia in Kent County, and 2 at Milford and 7 at Bridgeville in Sussex County. In Maryland 71 fields were examined, including 11 at Denton, 8 at Goldsboro, 11 at Greensboro, and 4 at Federalsburg in Caroline County, 9 at Church Hill, 12 at Ingleside, and 12 at Centerville in Queen Annes, and 3 at Chestertown in Kent County. Diseases were slow in developing in

these drought sections, and leaf scorching and drying of entire plants confused the symptoms. Drought had killed 30% of the small and half-grown plants at Marydel, and in 2 fields near Milford about half of the plants were killed. Severe drought damage was noted in 2 fields at Bridgeville. In Maryland, 10% and 30% of the plants had been killed in 2 fields near Greensboro, 10% in a field near Goldsboro, and 20% in one at Ingleside. Hail injury was noted in 2 fields near Goldsboro. Deficiency symptoms were extremely pronounced in Queen Annes County in the vicinity of Queenstown, Centerville, and Price, manifested in yellowing and browning of the leaves possibly due to Potassium and Magnesium Deficiencies in the lighter soils. Bacterial Blight on the lower leaves was observed in 6 fields in Delaware and 11 fields in Maryland. Phyllosticta Leaf Spot was severe in 3 Maryland fields, 2 near Ingleside and 1 near Hope. An Alternaria Leaf Spot was also observed near Hope. Mosaic was not observed in any field visited.

On July 29, 111 fields were visited in Queen Annes and Kent Counties on the Maryland Eastern Shore, Kent and New Castle Counties in Delaware, and Cumberland, Atlantic, and Camden Counties in southern New Jersey. Seventy-six fields appeared free from disease. Drought conditions continued serious in all areas visited on this trip. Early-planted soybean fields near Queenstown and Centerville, Maryland showed areas that had already dried up, and in one field 40% of the crop was killed. Near Clayton in Kent County, Delaware, the late crop was germinating slowly, growth was retarded, and 25% or more of the young plants were already killed by the drought. Drought damage in New Jersey was moderate in 2 fields in the Fairton-Newport area in Cumberland County, and very severe in a field near Vineland, Cumberland County, and another near Berlin in Camden County.

Observations during this trip are summarized in the following tabulation:

Disease and condition	Number of fields		
	Maryland	Delaware	New Jersey
Practically disease-free	41	23	12
Bacterial Blight	12	3	2
Downy Mildew	3	0	0
Phyllosticta Leaf Spot	5	0	0
Deficiency (Mineral) and Drought Injury	3	5	4
	64	31	18

In Maryland, Bacterial Blight was slight to moderate in 2 fields near Guys, 3 near Centerville, 4 near Chestertown, and 3 in the Rock Hall-Galena area. In Delaware slight infection was noted in 2 fields near Smyrna and moderate infection in a field at Clayton. Light amounts were observed in 2 fields near Fairton, New Jersey. Downy Mildew was seen only occasionally. A light infection was observed in 1 field near Guys and 2 fields near Centerville. Phyllosticta Leaf Spot appeared to be increasing in amount on the early crop in Maryland. It was severe in 5 fields in the Queenstown, Centerville, and Chestertown areas.

During the first week in August 19 fields were visited in Carroll County in north-central Maryland; most of them were relatively free from disease.

Some drought injury was observed, with the worst effect near Mt. Olive and Taylorsville. Bacterial Blight was showing up in fields near Mt. Airy and was spreading slowly in other areas. Phyllosticta Leaf Spot occurred in slight to moderate amounts in 2 fields near Mt. Airy.
EMERGENCY PLANT DISEASE PREVENTION PROJECT

OTHER REPORTS ON DISEASES OF SOYBEANS

Reports are of Emergency Plant Disease Prevent Project surveys.

YEAST SPOT AND OTHER DISEASES IN VIRGINIA: Soybean varietal tests were visited at Orange and Williamsburg. Early varieties at Orange showed Mosaic (Virus), Bacterial Blight, Frogeye, and Yeast Spot [Nematospora coryli] but only in trace amounts. At Williamsburg Bacterial Pustule [Xanthomonas phaseoli var. sojense] was severe on all varieties, and Downy Mildew was also present on some varieties. -- R. E. Atkinson, August 16-26.

WILDFIRE AND OTHER DISEASES IN MISSISSIPPI: Surveys during the week of August 28 to September 1 were conducted in the Poplarville-Laurel-Meridian areas. Traces of Southern Wilt (Sclerotium rolfsii) were found in many of the fields examined. Cercospora Leaf Spot was found to be rather severe in one field in Clark County and another near Hattiesburg. What apparently is Wildfire (bacterial) was noted as being common in one field in Clark County. -- Douglas C. Bain

BUD BLIGHT, WILDFIRE, AND OTHER DISEASES IN ILLINOIS: In Champaign County 8 fields of soybeans, largely the variety Illini, were examined by Dr. W.B. Allington of the U. S. Regional Soybean Laboratory and the writer on August 28. Traces of Downy Mildew, Pustular Spot, Bacterial Blight, Septoria Brown Spot, and Alternaria atrans were observed. In a 15-acre field Bud Blight (virus resembling Tobacco Ringspot Virus) was found on 66% of the plants and the crop loss estimated at 10%. In another planting of 30-acres the amount of Bud Blight varied in different parts of the field, ranging from 1% to 90% of infected plants, the loss again being estimated at 10%. The buds at the top of the plant were curling or dying and many of the pods with brown blotches and spots were dropping. Brown necrotic areas were also to be found in the stems when cut lengthwise. In the same 30 acres, a trace of Wildfire (bacterial) was also observed as well as an occasional plant dead from Charcoal Rot caused by Sclerotium bataticola.

On another trip south and west of Urbana, the writer and Dr. Allington were accompanied by J. L. Carter and Carl Feaster of the U. S. Regional Soybean Laboratory. A number of the soybean fields in Douglas, Coles, Cumberland, Effingham, Fayette, Shelby, and Christian Counties showed traces of the various diseases already mentioned as occurring in Champaign County. However, in none of the 20 fields surveyed on this trip was Wildfire observed and in only 3 fields was Charcoal Rot found, these in Effingham, Fayette and Shelby Counties. -- J. S. Tidd.

WILDFIRE IN INDIANA: Dr. C. T. Gregory of the Purdue Agricultural Experiment Station reported that on August 29 he observed a 20-acre field of the Lincoln variety in Hendricks County in central Indiana as 100% infected with Bud Blight. The grower was said to have grown soybeans on this ground every fourth year for possibly the last 16 or more years. -- J. S. Tidd.

DISEASES IN MISSOURI: A survey for the incidence of disease in soybean plantings was made during the week ending August 26 along a route extending from central Missouri to the Kansas border and then south to Newton and Barry Counties in southwestern Missouri. All counties travelled lie south of the Missouri River. Frequent, moderately heavy rains occurred during the entire period over all of the area visited, restricting, in some instances, the extent of the survey. The bacterial leaf spots, Bacterial Pustule and Bacterial Blight, were evident in all plantings. In a few fields, light infection was confined to the lowermost leaves. In other fields as much as 90% of the foliage showed infection and some defoliation had occurred. Bacterial Pustule, in general, appeared to be the more prominent disease in this complex. Bud Blight-infected plants were found in 60% of the fields, but in all instances only an occasional scattered plant was affected. In only one field was the pod-spotting phase of the disease observed. Mosaic infection was observed in 60% of the plantings. Except in one field in which an estimated 5% of the plants were diseased, only an occasional plant was affected. Downy Mildew infection was observed in a third of the fields. The infection in general was light and in the early stages of development, although in one field 2/3 of the foliage showed vigorous and extensive infection. -- T. W. Bretz

DISEASES OF SMALL GRAINS IN VIRGINIA IN 1944

Edward K. Vaughan

For the first time in 8 years Ergot, Claviceps purpurea, was conspicuous on rye, particularly in Washington, Tazewell, and Russell Counties. Although total losses were not great, sections of certain fields had as much as 5% of the heads infected. Nineteen sclerotia were found in one head, and 12 or more were present in many others. No infection in wheat, barley, oats, or wild grasses was noted.

Stem Rust, Puccinia graminis, was much less severe than in 1943. Wheat suffered most, with a reduction in yield for the State of perhaps 2 to 3%. For oats the reduction was about 0.5%. Barley and rye were so lightly infected that practically no loss resulted.

Loose Smut of wheat, Ustilago tritici, was unusually severe, Redheart being the variety on which the greatest amount of infection occurred. In tidewater Virginia losses of 8 to 10% in individual fields were not uncommon, although for the entire section losses probably did not exceed 2%. In the western part of the State losses were not so great, amounting to not more than 1 to 1.5%.

Powdery Mildew, Erysiphe graminis, was unusually severe on wheat east of the mountains. In many fields 100% of the leaves were infected, many of them severely. Losses due to mildew probably did not exceed 2%. Mildew on barley was more severe than in most years but caused little reduction in yield.

Scab, Gibberella saubinetii [G. zeae] was severe only in the south-western part of the State. Perhaps 10% of the crop was affected and crop losses did not exceed 4 to 5%.

The Wheat Nematode, Anguina tritici, caused much less damage than in former years. It was found in only a few fields and in these the reduction in yield was not great.

Although all of the common diseases of small grains were present in some fields, none except those mentioned were sufficiently important to cause the growers any concern. The 1944 season was characterized by only light losses due to diseases and insect injury, and was one of the most successful cereal growing years on record.

VIRGINIA AGRICULTURAL EXTENSION DIVISION.

OTHER REPORTS ON DISEASES OF CEREAL CROPS

Reports are of Emergency Plant Disease Prevention Project surveys.

BARLEY DISEASES: During the last part of August a survey was made with Dr. G. H. Starr, Plant Pathologist of the University of Wyoming, in Platte, Johnson, Converse, Sheridan, Big Horn, Park, Washakie, Hot Springs, and Fremont Counties, WYOMING. Covered Smut (Ustilago hordei), Loose Smut (U. nuda), and Stripe (Helminthosporium gramineum) were found in small amounts in all fields inspected. Stem Rust (Puccinia graminis var. tritici) was found generally over the entire area surveyed, with severity ranging from a trace to 10% and prevalence from a trace to 100%. -- E. W. Bodine

Ergot (Claviceps purpurea) was observed affecting about 2% of the barley heads in a field near Sandpoint in northern Idaho. -- Earle C. Blodgett, August 6-12.

RAMULARIA LEAF SPOT ON BUCKWHEAT IN WEST VIRGINIA: Buckwheat fields were visited in Preston and Tucker Counties. The only disease observed was caused by Ramularia rufomaculans Pk., identified by Dr. Lindsay S. Olive.-- R. E. Atkinson, August 17-26.

REPORTS ON CORN DISEASES: Bacterial Wilt (Bacterium stewartii) in Iowa. Very little Bacterial Wilt was seen in southeastern Iowa. Some firing due to lack of rain more or less obscured any Bacterial Wilt that may have been present earlier. In the Marshalltown area none was seen on sweet corn, and Mr. Verne Filbert of the Marshall Canning Company stated that he had not seen the disease this year in a personal inspection of at least 1/3 of their fields. This is of interest in view of the heavy infection found in the popcorn areas in the southwestern part of the State (see preceding issue PDR). However, it is probable that some Bacterial Wilt does exist on sweet corn in areas missed by surveys made so far. The disease has been rather general in the field and experimental plots at Ames. -- Edgar F. Vestal, August 22-26.

Zonate Leaf Spot in Mississippi. Zonate Leaf Spot (Gloeocercospora sorghi) was found in considerabe amounts in one field adjacent to infected sorghum, in Lauderdale County. Apparently this is the first report of this fungus on this host in Mississippi. -- Douglas C. Bain, August 28-September

Other Diseases. A 4-acre field of Golden Bantam sweet corn in Poquonock, Hartford County, CONNECTICUT, showed 8% infection by Smut [Ustilago maydis] (R. C. Cassell, August 25). Smut was general in small amounts in all of the 14 counties visited in eastern WISCONSIN (Edwin E. Honey, July 24-August 9). Smut was present in all fields examined in southeastern IOWA, as was Rust [Puccinia sorghi], but neither was serious (Edgar F. Vestal, August 22-26).

FLAX RUST IN WISCONSIN: Rust (Melampsora lini) was observed on flax cultivated for seed in Door County. -- Edwin E. Honey, July 24-August 9.

REPORTS OF DISEASES OF OATS: In northeastern MAINE (Aug. 28-Sept. 2), a trace of Stem Rust (Puccinia graminis var. avenae) was found in one field in Linneus and one in Houlton, a trace of Covered Smut (Ustilago levis) [U. kolleri] in fields in Linneus, Houlton, and Keegan, and moderate to heavy infection by Crown Rust (P. coronata) throughout one field in Keegan. In MASSACHUSETTS, Crown Rust was found in 2 fields and Covered Smut in 1 field in Southampton, July 10. Prevalence of Crown Rust in one field was about 10% and severity light; in the other field prevalence was almost 80% and severity moderate to heavy. The Smut occurred in traces. -- R. C. Cassell.

In WYOMING (see above under barley for area surveyed) Stem Rust and Loose Smut (U. avenae) were found only in trace amounts. Covered Smut was found to be quite prevalent in Big Horn County. In most fields a trace to 3% infection was noted; in one field, however, 30% of the plants were infected. Halo Blight (Pseudomonas coronafaciens) was found in Sheridan and Big Horn Counties; infection ranged from a trace to 10%. -- E. W. Bodine, August 20-September 2.

Only traces of Stem Rust were found in western OREGON in oat fields northeast of Albany, (August 24). One had to hunt for specimens. -- Lytton W. Boyle.

RICE DISEASES IN ARKANSAS: Approximately 400 acres were surveyed during the period July 27 to August 12.

Brown Spot (Helminthosporium oryzae) occurred in nearly all of the fields surveyed. However, in most instances, the amount of infection was limited from a trace to a reduction of not more than 2% of the leaf area. In several fields Brown Spot was just beginning to appear, and greater reductions in leaf area are anticipated.

Narrow Brown Leaf Spot (Cercospora oryzae) was observed in several of the fields surveyed. In all of the plantings except one the reduction in the leaf area was negligible. In a 75-acre planting near Weiner (Poinsett County) approximately 2% of the leaf area had been invaded at this early date.

Stem Rot (Leptosphaeria salvinii) was beginning to appear in plantings near Stuttgart (Arkansas County); however, the infections were limited to small, discolored areas on several leaf stalks near the surface of the water.

White Tip (Undetermined) was the most prevalent disease of rice observed during this trip. Nearly every field had at least a trace. In one large planting in Cross County at least 1 1/2 inches of every leaf tip were affected.

Several alkaline spots were observed in Arkansas and Cross Counties, not uncommonly attaining an acre in size. -- Howard W. Larsh.

ERGOT ON RYE: Ergot (Claviceps purpurea) was found on plants growing alongside of the highway north of Cody, WYOMING. The number of sclerotia ranged from 1 to 15 per head (E. W. Bodine, August 20-September 2). Ergot was noted to be rather prevalent on rye at Hope in northern IDAHO (Earle C. Blodgett, August 6-12).

DISEASES ON SORGHUM IN MISSISSIPPI: In Lauderdale and Noxubee Counties, Zonate Leaf Spot (Gloeocercospora sorghi) and Anthracnose (Colletotrichum graminicolum) are very abundant. The latter fungus appears to be restricted to midrib tissue and stalks (Red Rot). In a 10-acre field at Quitman in Clark County, planted to sorghum and cowpea, the young plants of sorghum were heavily infected with Gloeocercospora, and killing of plants less than 12 inches tall was evident. -- Douglas C. Bain, August 28 - September 1.

WHEAT DISEASES IN WESTERN STATES: In spring wheat Stem Rust (Puccinia graminis var. tritici) was general over the entire area travelled in Wyoming (see above under Barley). Severity ranged from a trace to 95% with a trace to 100% in prevalence. Heaviest infections were noted in Sheridan, Johnson, and Fremont Counties. Loose Smut (Ustilago tritici) was noted in a few fields in trace amounts. Ergot (Claviceps purpurea) was found on a few heads in one field of spring wheat east of Cody in Park County. -- E. W. Bodine, August 20-September 2.

The only wheat fields encountered in Rio Grande and Saguache Counties in southern COLORADO were those planted with the Thatcher variety. No Stem Rust was observed. Leaf Rust (P. rubigo-vera var. tritici) was present only in trace amounts. -- E. W. Bodine, August 8-12.

On August 5, in company with John Keene, Horticultural Inspector at Clarkston, a survey was conducted in Asotin County in extreme southeastern WASHINGTON. Bunt [type not specified] in winter wheat was causing considerable damage, but accurate counts were not possible. In 2 fields small areas skipped by the combine showed 20 and 30% bunted heads. It is very unlikely that infection was this high generally, but we got the impression from limited survey and conversation with farmers that bunt was of considerable importance. -- Earle C. Blodgett.

In northern IDAHO near Sandpoint Leaf Rust was prevalent and in some cases severe enough to cause shriveling of the grain. One field near Coeur d'Alene showed severe Stem Rust, but generally there was much less than usual. Dwarf Bunt (Tilletia tritici [T. caries] special race) was noted in fields of Golden in Kootenai County, near Rathdrum and near Worley. Infection probably ranged from a trace to 2%. Root Rot (probably Cercosporella herpotrichoides) was noted in wheat fields on the Rathdrum prairies. Dwarf Bunt was noted near Troy on winter wheat, apparently of the variety Rex although this variety is regarded as quite resistant. --- Earle C. Blodgett, (August 6-17).

VIRUS DISEASES OF STONE FRUITS

EASTWARD EXTENSION OF PEACH X-DISEASE ON CHOKECHERRY IN PENNSYLVANIA: On a trip with Mr. A. H. Bauer of our office, August 23, Mr. Bauer pointed out a clump of chokecherry, showing symptoms of X-Disease, just outside of Altoona in central Blair County. Later he confirmed the diagnosis. On a

subsequent visit to the same place I found that the disease had been established in chokecherry for a time sufficient to cause excessive killing, and all plants with a radius of about 3/4 of a mile seem to be badly infected.

On a visit early in the year to a peach area on the border line between Blair County and Bedford County just south, I did not find affected chokecherry. However, peach growers to whom I had talked about the danger to their orchards found a considerable number of chokecherries in another clump that were apparently affected by X-Disease. On a recent revisit to southern Blair County I found X-Disease symptoms in 90% of the chokecherry growing in the border between 2 large peach orchards. This seems to be a recent infection since the fruit is all practically normal in size. This is the first time that X-Disease has been found in any Pennsylvania counties where peaches are grown commercially, and it marks an eastward jump of the disease. -- George L. Zundel, Pennsylvania State College.

WESTERN X-DISEASE AND OTHER PEACH VIRUS OR OBSCURE DISEASES IN EASTERN WASHINGTON: On August 5, in company with John Keene, Horticultural Inspector at Clarkston, a survey was made in Asotin County in extreme southeastern Washington. In a planting of about 50 Hale peach trees, most of the trees were affected with Wart (Virus) and/or Rust Spot (cause undet., see PDR 25: 27-28, 1941). The Rust Spot fruits were rather bumpy and malformed in addition to the typical rust spot areas; this combination of symptoms has not been noticed previously. It is obvious that at least in the case of Wart, the infection was introduced with the trees from the nursery. Western-X (Virus) was also present in this orchard.

On August 8, in company with Paul Moody, Horticultural Inspector at Spokane, peach orchards near Kettle Falls were examined. Western-X has damaged several orchards seriously, and if it continues as at present will finally eliminate the plantings. Some of the 3-year-old replants are infected. Wild chokecherries are abundant in nearby areas and many of them show bright red foliage. -- Earle C. Blodgett.

OTHER REPORTS OF X-DISEASE ON CHOKECHERRY: X-Disease or Yellow-Red Virosis was common on shrubs or clumps of small chokecherry trees on roadsides in Dane, Rock, Walworth, Kenosha, and Racine Counties in eastern WISCONSIN (Edwin E. Honey, July 24-August 9). What appeared to be symptoms of the Western X-Disease was noticed on chokecherries in Sheridan County, WYOMING (E. W. Bodine, August 20-September 2).

SWEET CHERRY MOTTLE LEAF IN NORTHERN IDAHO: Mottle Leaf was noted on 4 trees in 2 orchards near Hope. In one case 2 trees were bud-inoculated with infected scions. -- Earle C. Blodgett, August 6-12.